4. Fatimah

Program Name: Fatimah.java **Input File: fatimah.dat**

Fatimah is playing a video game, *Pouch Monsters*. She's amassed a team of N amazing monsters, but not all of them get along. More specifically, there are M pairs of monsters that do not get along and refuse to go adventuring with each other.

Fatimah wants to go adventuring with as many of her monsters as possible. She's asked you to write a computer program to help her out.

Input: The first line of input is T (1 <= T <= 20), the number of test cases. Each test case begins with two integers N (1 <= N <= 12) and M (0 <= M <= 20), where N is the number of monsters, and M is the number of pairs of monsters which do not get along. The following N lines each have the name of one of Fatimah's monsters. The M lines after that each have the names of two of Fatimah's monsters that do not get along.

All monster names are at most 20 lowercase English letters. All monsters listed in a pair are guaranteed to appear in Fatimah's list of monsters. No pair will have the same monster listed twice.

Output: For each test case, output the maximum number of monsters Fatimah can take with her, formatted with the case number as in the samples.

Sample Input:

```
3
3 1
pikawho
charzar
meeth
pikawho meeth
4 2
kaysi
asa
rengo
seju
rengo kaysi
asa seju
5 0
kenny
rayu
chunnley
gail
baisen
```

Sample Output:

```
Case #1: 2
Case #2: 2
Case #3: 5
```

Sample Explanation:
In the first sample, Fatimah can always adventure with "charzar" and can choose to adventure with either "pikawho" or "meeth". Regardless of who she chooses, she can adventure with at most two monsters.

In the third sample, all five monsters get along, so she can adventure with all five of them.